

**TOSHIBA**

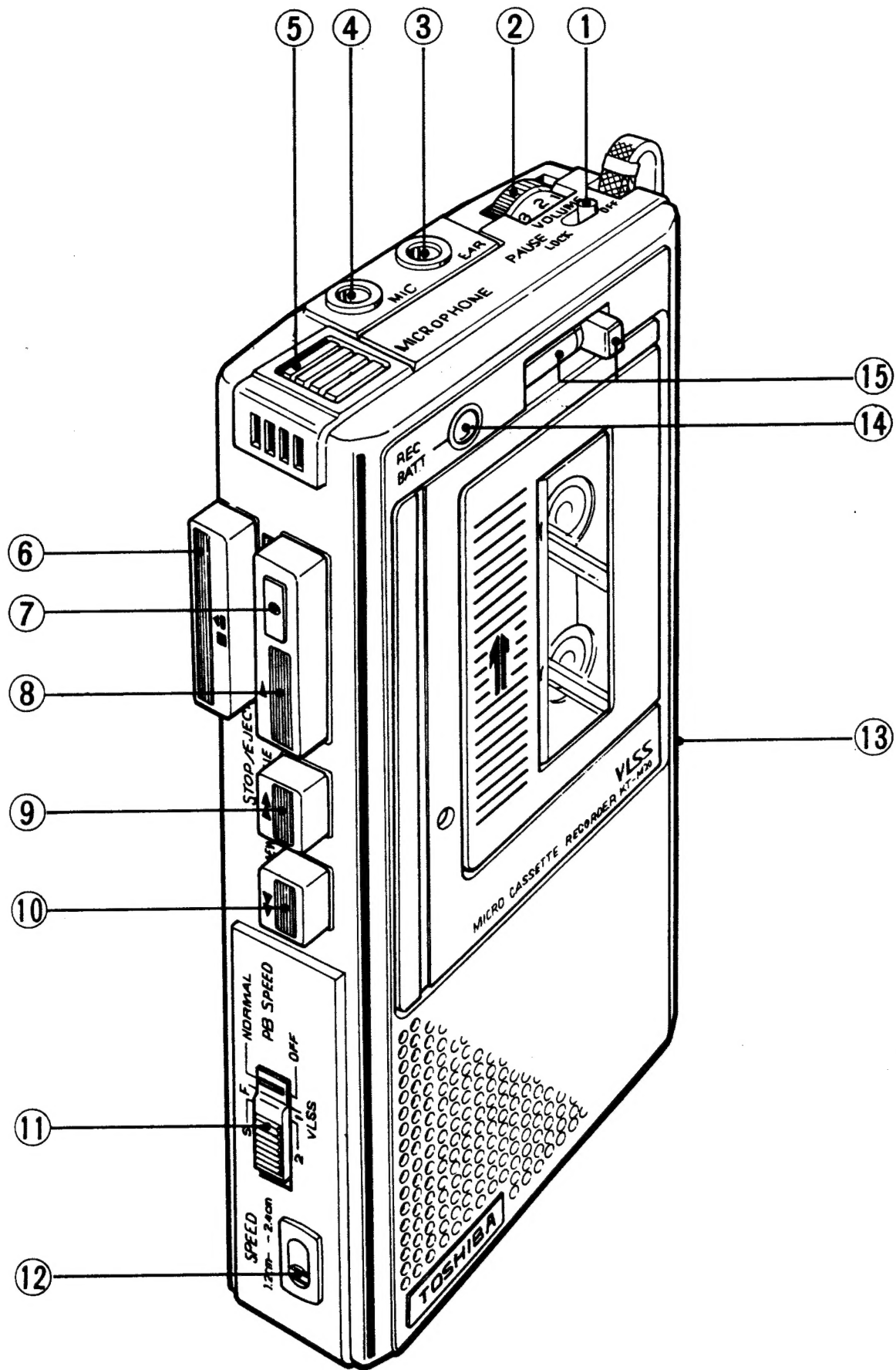
MICROCASSETTE RECORDER

**KT-M20**

TM  
MICROCASSETTE

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11432



# Control Features

- ① [PAUSE] switch
- ② [VOLUME] control
- ③ [EAR]: Earphone jack
- ④ [MIC]: Microphone jack
- ⑤ Built-in microphone
- ⑥ [■▲STOP/EJECT] button
- ⑦ [●REC]: Record button

To start recording, press the [●REC] and [▶PLAY] buttons simultaneously.

- ⑧ [▶PLAY] button
- ⑨ [▶▶CUE]: Fast forward/cue button
- ⑩ [◀◀REVIEW]: Rewind/review button
- ⑪ [PB SPEED/VLSS] switch

See page 5.

- ⑫ [SPEED]: Tape speed switch

Selects tape speed for both play and record modes. (See page 5.)

- ⑬ [DC IN 3 V] jack

- ⑭ [REC/BATT]: Record/battery indicator lamp

In the record mode, the lamp indicates (red) the input recording signal level. During playback, this indicator lights (green) if the internal batteries are not discharged.

- ⑮ TAPE COUNTER and RESET button

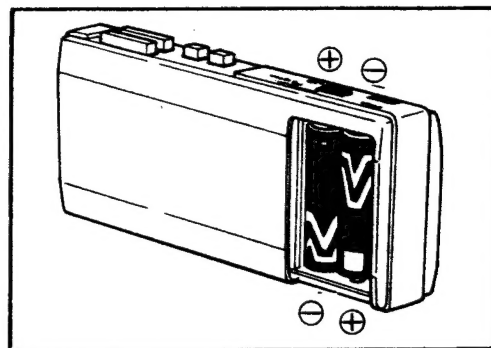
# Power Supply

## Dry Cell Operation

- Remove the battery compartment lid from the rear of the unit by pushing it in the OPEN direction shown by the arrow.

Insert two "AA" dry cells into the compartment. Take care that the cells are oriented for correct polarity.

- Press the [▶PLAY] button; the [REC/BATT] indicator will light (green). If this indicator remains off or is dim, the battery cells are discharged. Replace them with new "AA" dry cells.



## AC Line Operation (with optional AC adaptor)

To power the unit from an AC mains outlet, purchase the optional AC adaptor. Plug the AC adaptor into a convenient AC outlet, then insert the output plug from the adaptor into the [DC IN 3 V] jack on the unit. This will automatically disconnect the internal batteries and supply power to the unit from the AC mains.

**Note:** The centre contact in the [DC IN 3 V] jack of this unit requires a negative voltage. Incorrect AC adaptors may provide a positive voltage to the centre contact, damaging the unit.

For internal battery operation, remove the AC adaptor plug from the [DC IN 3 V] jack.

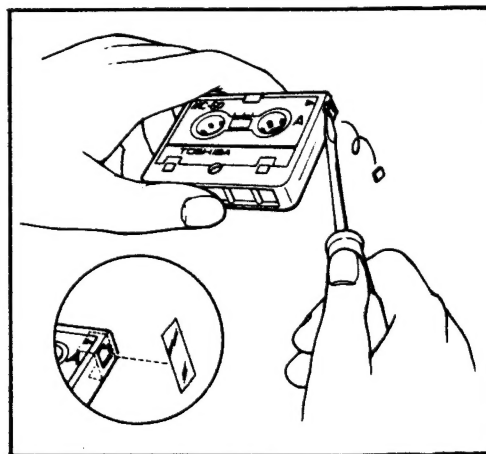
## For Cassette Tape

### Prevention of Accidental Erasure

- To protect your tape library from accidental erasure, it is recommended that the erasure prevention tabs be removed from tapes after recording.
- To record on a tape from which the erasure prevention tab has been removed, cover the tab hole with a piece of adhesive tape.

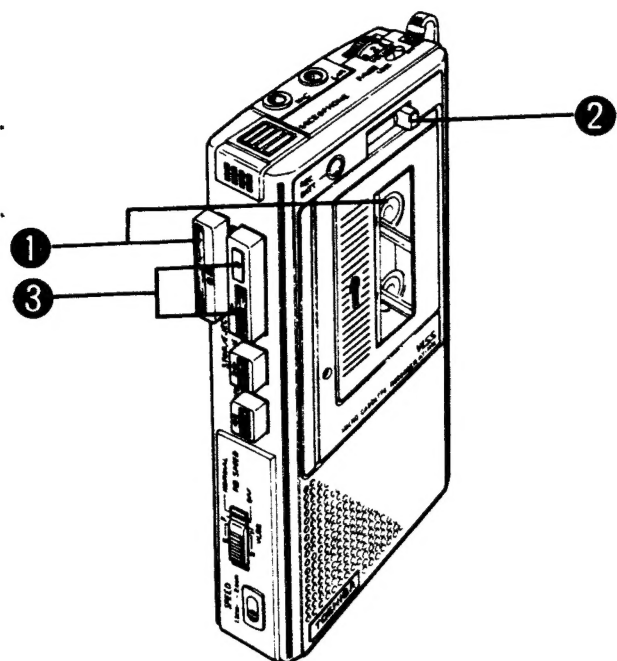
### Tape Slack

- Before inserting a microcassette into the recorder, take up any tape slack to prevent the tape from becoming entangled around the capstan. To do this, twist the cassette hub inside the cassette with a pencil.



# Recording

To record, proceed as follows:



- ① Insert a blank tape with the side to be recorded facing you.
- ② Press the RESET button to reset the tape counter to zero. This will allow the beginning of the recording to be easily rewound to.
- ③ Press the [●REC] and [▶PLAY] buttons simultaneously to place the unit in the record mode. (The [REC/BATT] indicator lamp will light.)
- ④ The tape is now recording through the built-in microphone.

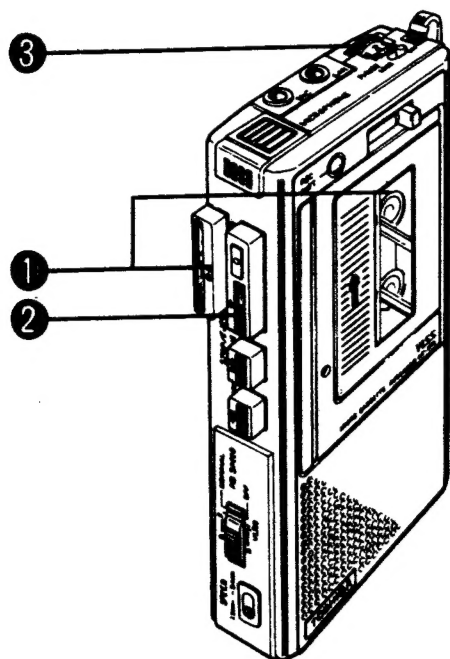
- The indicator will not light if the [PAUSE] switch is in the "LOCK" position.
- Since the unit is equipped with an Automatic Level Control (ALC) system, the recording level is always automatically set for optimum recording—manual setting is not required.
- The [●REC] pushbutton can not be depressed if the erasure prevention tab has been removed from the microcassette. Do not attempt to forcibly depress the button.
- To record with an external microphone, plug it into the [MIC] jack.
- To record from other sources such as a radio plug the audio line cable from the source into the [MIC] jack.

## How To Erase a Recorded Tape

To erase a recorded tape, insert the earphone into the [MIC] socket, then place the unit in the record mode. The recorder will then pick up loud background noise and record it on the tape. To produce an erased tape with a low noise level, perform tape erasing in a quiet place. For tape erasing, set the [VLSS] switch to the OFF position.

# Playback

To play back a tape, proceed as follows:



- ① Press the [■▲STOP/EJECT] button to open the cassette holder. Insert a cassette with the side to be played back facing you. Close the cassette compartment.
- ② Press the [▶PLAY] button.
- ③ Adjust the [VOLUME] control until the desired listening volume is obtained.

- When the [▶PLAY] button is pressed, the [REC/BATT] indicator lamp will light (green) if the battery is not discharged. The indicator will not light if the [PAUSE] switch is in the "LOCK" position.

## Cue and Review Features

### ● Cue feature [▶▶CUE]

While the tape is playing, if the [▶▶CUE] button is pressed and held in, the tape will fast-wind forward while playing, thus allowing a particular point in the recorded programme to be found. When the button is released, normal playback will resume.

### ● Review feature [◀◀REVIEW]

While the tape is playing, if the [◀◀REVIEW] button is pressed and held in, the tape will fast-wind backward while playing. When the button is released, normal playback will resume.

## Auto Shut Off (ASO)

The AUTO SHUT OFF feature automatically disengages the tape transport and switches off the unit when the end of the tape is reached in either record or playback modes.

# **[PB SPEED/VLSS] Switch Operation**

This switch functions as a [PB SPEED] switch in play mode and as a [VLSS] (Voice Level Sensor System) switch in record mode.

## **[PB SPEED] Switch Function**

- F (Fast):** Plays back the tape at a speed approximately 1.2 times the normal speed for quick identification of a recorded programme.
- S (Slow):** Plays back the tape at a speed approximately 0.9 times the normal speed to increase intelligibility of a recorded programme. (The switch is not effective when the Tape Speed Switch [SPEED] is in the 1.2 cm/s position.)
- NORMAL:** Plays back the tape at a speed identical to the recording speed.

## **[VLSS] Switch Function**

- When the switch is set to position "1" or "2" before recording, recording starts only when the input recording level exceeds the threshold level selected with the switch.  
Position 1: Select this position when the recording environment is relatively quiet.  
Position 2: Select this position when the recording environment is relatively noisy.
- When the VLSS switch is set to 1 or 2, recording will not take place if the sound is too far and quiet. Observe the [REC/BATT] indicator blinks to confirm that recording is taking place.

## **Tape Speed Switch**

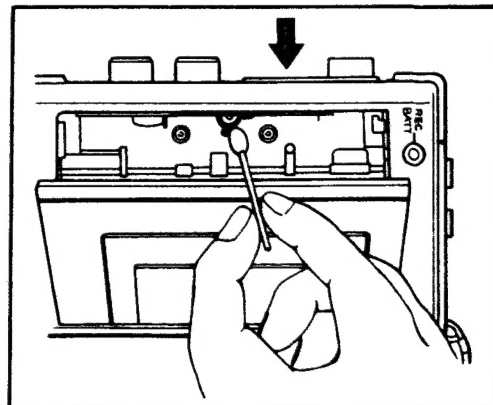
- 2.4 cm/s:** Permits 60 minutes of recording on both tracks of an MC-60 microcassette tape.
- 1.2 cm/s:** Permits 120 minutes of recording on both tracks of an MC-60 microcassette tape. This tape speed is especially useful for recording long conferences.
- During playback, select the same tape speed as that used for recording.

# Care and Maintenance

To maintain the performance of your recorder always at its best, keep the entire tape path, including the record/playback head, pinch roller, and capstan, completely clean.

## Cleaning the Tape Path

Press the [■▲STOP/EJECT] button to open the cassette holder. Then press the [▶PLAY] button to raise the heads. Dip a cotton bud into a little alcohol, remove excess alcohol from the bud, then clean the entire tape path with the bud. During cleaning, take care to avoid scratching the head surface.



## Cleaning the Unit Housing

To clean the unit housing, use a soft, dry cloth. If dirt persists, use a soft cloth slightly dampened with water. After cleaning, wipe the unit surface with a dry cloth.

**Caution:** Never use chemicals such as benzene or paint thinner for cleaning.

## In Case of Difficulty

If your set is not operating properly, check the points listed in the following table.

- Tape fails to move
  - Is the [PAUSE] switch set in the "LOCK" position?
- Not possible to put the unit record mode
  - No tape in the cassette compartment?
  - Erasure prevention tab in the side edge of cassette tape already broken off?
- Noise present during playback
  - Recorded programme material was noisy.

# Notes and Precautions

1. To prevent possible trouble or physical deformation, avoid operating or leaving the recorder and microcassettes in places where:
  - They will be in the path of direct sunlight. (Especially in a closed car)
  - They are subject to direct radiation or hot airflow from heating device.
  - They are subject to oily smoke or excessive moisture, as in a kitchen, etc.
2. Do not place the unit or cassettes near highly magnetic materials.
3. If cassettes are carried loose, that is not in their cases, the tape may slacken. To prevent trouble in operation from loose tape, always carry cassettes in their plastic cases.
4. If you carry the recorder in your jacket pocket or bag, note that a control button may be pressed accidentally and the unit power switched on.
5. If the unit is to be left unused or is to be powered from the AC adaptor for a prolonged period of time, remove the dry cells from the unit. Otherwise, the cells may leak causing corrosion of unit parts.
6. Do not touch the unit with bare, wet hand.
7. After operation, reset all the control buttons to the OFF position.

# Specifications

<b>Track system:</b>	Dual track, 1 channel, monaural
<b>Recording system:</b>	AC bias (40 kHz)
<b>Erase system:</b>	Magnet erasure
<b>Recommended tape:</b>	MC-60 microcassette tape
<b>Tape speeds:</b>	2.4 and 1.2 cm/sec.
	Playback speeds:   Approx. 1.2 times the normal Approx. 0.9 times the normal
<b>Frequency response:</b>	300 Hz—6 kHz
<b>Semiconductors:</b>	13 transistors 1 FET (for built-in microphone) 2 ICs 3 diodes
<b>Speaker:</b>	38 mm dia. dynamic speaker
<b>Maximum output:</b>	200 mW (2.4 cm/s)
<b>Input terminals:</b>	External microphone jack [MIC] (3.5 mm dia.) Input impedance: 400 ohm to 2.2k ohm Input level:           0.5 mV
<b>Output terminal:</b>	Earphone jack [EAR] (3.5 mm dia.)
<b>Power supply:</b>	3 VDC ("AA" x 2 cells) External power supply [DC IN 3 V] (5.5 mm dia. Centre contact negative)
<b>Battery life:</b>	Approx. 7.5 hours (SUM-3 "AA" x 2)
<b>Dimensions:</b>	135 (H) x 65.5 (W) x 22.9 (D) mm
<b>Weight:</b>	250 g (including dry cells)

*Specifications are subject to change without notice for improvement.*

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MANUFACTURED BY  
**TOSHIBA CORPORATION**

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PRINTED IN JAPAN 22902915 ⑦